UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/820,311	03/29/2001	Makoto Hagai	2001_0373A	1930

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EXAMINER
HAN, CLEMENCE S

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.		Applicant(s)	
Office Action Summary		09/820,311		HAGAI ET AL.	
		Examiner		**Art Unit**	
		Clemence Han		2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-17* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-17* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a) ☐ All   b) ☐ Some *   c) ☐ None of:

　　　1. ☐ Certified copies of the priority documents have been received.

　　　2. ☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1.   An initialed and dated copy of Applicant's IDS form 1449, Paper No. 5, is

attached to the instant Office action.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

3.   Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

4.   Claim 4 recites the limitation "the stream switchable position" in line 5.

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102

that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

6.   Claim 12–17 are rejected under 35 U.S.C. 102(e) as being anticipated by

Shiomoto et al. (US Patent 6,584,120).

In regard to claim 12, Shiomoto teaches a multiplexer for multiplexing

plural streams which are obtained by coding plural digital data, and outputting a

multiplexed stream comprising: a position detection unit for detecting a switchable

position in a stream to be multiplexed, at which position a decoding process for the

stream can be interrupted (Column 6 Line 53–65); and a multiplexing unit for

carrying out a multiplexing process of dividing each of the streams at the

switchable position to generate divided stream parts corresponding to each stream

and multiplexing the respective streams taking the divided stream part as a unit, to

output the multiplexed stream (Figure 1).

In regard to claim 13, Shiomoto teaches the multiplexing unit carries out the

multiplexing process such that information which identifies the switchable position

corresponding to each stream is included in the multiplexed stream (Column 6

Line 53–65).

In regard to claim 14, Shiomoto teaches each of the streams is obtained by

carrying out a coding process for digital data repeatedly for each predetermined

coding unit (Figure 3), and the stream switchable position of each of the streams

matches with a head position or rearmost position of the coding unit (Column 6

Line 53–65).

In regard to claim 15 Shiomoto teaches a multiplexing method for

multiplexing plural streams which are obtained by coding plural digital data, to

generate a multiplexed stream comprising: a position detection process of detecting

a switchable position in a stream to be multiplexed, at which position a decoding

process for the stream can be interrupted (Column 6 Line 53–65); and a

multiplexing process of dividing each of the streams at the switchable position to

generate divided stream parts corresponding to each stream, and unifying the

divided stream parts by the respective streams to generate the multiplexed stream

(Figure 1).

In regard to claim 16 Shiomoto teaches the divided stream part includes a

plurality of multiplexing units each having a predetermined stream length (Column

9 Line 28–34).

In regard to claim 17, Shiomoto teaches a multiplexing method for carrying

out a multiplexing process for plural streams which are obtained by coding plural

digital data, to generate a multiplexed stream comprising: a position detection

process of detecting a switchable position in each stream, at which a decoding

process for the stream can be interrupted (Column 6 Line 53–65); a division

process of dividing each stream by a predetermined stream length, to generate

divided stream parts as multiplexing units (Column 9 Line 28–34); and a header

information addition process of adding, to a head of each of the divided stream

parts, header information for identifying a corresponding stream wherein a flag is

added to header information corresponding to a divided stream part, an end

position of which matches with a switchable position of the stream, for indicating

that the end position matches with the switchable position of the stream (Column 6

Line 53–65).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

8.   Claim 1–11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Fujinami (US Patent 5,537,148) in view of Shiomoto et al..

In regard to claim 1, Fujinami teaches a decoder for receiving a multiplexed

stream which is obtained by multiplexing plural streams, and carrying out a

decoding process for each stream included in the multiplexed stream in a parallel

processing comprising: a demultiplexing unit 5 for separating the multiplexed

stream into plural streams by a demultiplexing process; a decoding unit 7, 9 for

carrying out a decoding process for one of the plural separated streams. Fujinami,

however, does not teach a stream selection unit for selecting one of the plural

separated streams and outputting the selected one to the decoding unit, thereby

converting a decoding target in the decoding unit from one stream to another

stream. Shiomoto teaches a stream selection unit 113, 114, 116 for selecting one

of the plural separated streams and outputting the selected one to the decoding unit,

thereby converting a decoding target in the decoding unit from one stream to

another stream. It would have been obvious to one skilled in the art to modify

Fujinami to have a stream selection unit as taught by Shiomoto in order to use less

parts.

In regard to claim 2, Shiomoto teaches said stream selection unit having a

position detection unit for detecting a stream switchable position in a stream being

subjected to the decoding process, at which position the decoding unit can interrupt

the decoding process, and the stream selection unit performs the stream selection

such that the decoding process for the stream which is being processed is

interrupted at the stream switchable position (Column 6 Line 53–65).

In regard to claim 3, Fujinami teaches a stream storage unit 6, 8 for storing

each of the plural separated streams by a predetermined amount from a head or

stream switchable position thereof to a subsequent stream switch position.

Fujinami, however, does not teach said stream selection unit performing the stream

selection such that the streams are output from the stream storage unit,

successively from a stream for which the process for storing the stream by the

predetermined amount has been completed. Shiomoto teaches said stream

selection unit performing the stream selection such that the streams are output from

the stream storage unit 102, successively from a stream for which the process for

storing the stream by the predetermined amount has been completed. It would

have been obvious to one skilled in the art to modify Fujinami to have a stream

selection unit as taught by Shiomoto in order to use less parts.

In regard to claim 4, Shiomoto teaches each of the plural separated streams

is obtained by carrying out a coding process for digital data repeatedly for each

predetermined coding unit (Figure 3), and the stream switchable position in each of

the streams matches with a head position or rearmost position of the coding unit

(Column 6 Line 53–65).

In regard to claim 5, Fujinami teaches a decoding method for carrying out a

decoding process for a multiplexed stream which is obtained by multiplexing

plural streams, in parallel for each of streams included in the multiplexed stream

comprising: a demultiplexing process 5 of separating the multiplexed stream into

plural streams; and a decoding process 7, 9 of decoding one of the plural separated

streams output. Fujinami, however, does not teach a stream selection process of

selecting one of the plural separated streams such that a target of a decoding

process is converted from one stream to another stream; said stream selection

process detecting a stream switchable position in a stream being subjected to the

decoding process, at which position the decoding process can be interrupted, and

performing the stream selection such that the decoding process for the stream

which is being processed is interrupted at the stream switchable position.

Shiomoto teaches a stream selection process 113, 114, 116 of selecting one of the

plural separated streams such that a target of a decoding process is converted from

one stream to another stream; said stream selection process detecting a stream

switchable position in a stream being subjected to the decoding process, at which

position the decoding process can be interrupted, and performing the stream

selection such that the decoding process for the stream which is being processed is

interrupted at the stream switchable position (Column 6 Line 53–65). It would

have been obvious to one skilled in the art to modify Fujinami to have a stream

selection unit as taught by Shiomoto in order to use less parts.

In regard to claim 6, Fujinami teaches a decoder for subdividing plural

streams into first multiplexing units, receiving a multiplexed stream which is

obtained by switching the respective streams successively for each of the first

multiplexing units, and carrying out a decoding process for each stream included in

the multiplexed stream comprising: and a decoding unit 7, 9 for carrying out a

decoding process corresponding to each stream. Fujinami, however, does not

teach a stream conversion unit for converting the multiplexed stream into a

multiplexed stream composed of second multiplexing units which are obtained by

gathering a plurality of the first multiplexing units together for the respective

streams; a switch position detection unit for detecting a switch position of each of

the multiplexing units in the multiplexed stream which has been converted by the

stream conversion unit. Shiomoto teaches a stream conversion unit 113, 114, 116

for converting the multiplexed stream into a multiplexed stream composed of

second multiplexing units which are obtained by gathering a plurality of the first

multiplexing units together for the respective streams; a switch position detection

unit for detecting a switch position of each of the multiplexing units in the

multiplexed stream which has been converted by the stream conversion unit

(Column 6 Line 53–65). It would have been obvious to one skilled in the art to

modify Fujinami to have a stream selection unit as taught by Shiomoto in order to

use less parts.

In regard to claim 7, Shiomoto teaches the second multiplexing unit composed of from the head or stream switchable position of each of the plural streams to the subsequent stream switch position (Column 6 Line 53–65).

In regard to claim 8, Fujinami teaches a decoder for subdividing plural streams into first multiplexing units, receiving a multiplexed stream which is obtained by switching each of the streams successively for each second multiplexing unit obtained by gathering a plurality of the first multiplexing units together for each of the streams, and carrying out a decoding process for each stream which is included in the multiplexed stream comprising: a decoding unit 7, 9 for carrying out a decoding process corresponding to each stream. Fujinami, however, does not teach a stream conversion unit for adding switch position information indicating a switch position of each stream to the multiplexed stream, to perform conversion of the multiplexed stream; a switch position detection unit for detecting a switch position of each of the multiplexing units in the multiplexed stream which has been converted by the stream conversion unit. Shiomoto teaches a stream conversion unit 113, 114, 116 for adding switch position information indicating a switch position of each stream to the multiplexed stream, to perform conversion of the multiplexed stream; a switch position detection unit for detecting a switch position of each of the multiplexing units in the multiplexed stream which

has been converted by the stream conversion unit (Column 6 Line 53–65). It

would have been obvious to one skilled in the art to modify Fujinami to have a

stream selection unit as taught by Shiomoto in order to use less parts.

In regard to claim 9, Shiomoto teaches the second multiplexing unit

corresponds to from a head or stream switchable position of each of the plural

streams to a subsequent stream switch position (Column 6 Line 53–65).

In regard to claim 10, Fujinami teaches a decoding method for subdividing

plural streams into first multiplexing units, receiving a multiplexed stream which is

obtained by switching each of the streams successively for each of the first

multiplexing units, and carrying out a decoding process for each stream included in

the multiplexed stream comprising: a decoding process 7, 9 for decoding each

stream. Fujinami, however, does not teach a stream conversion process of

converting the multiplexed stream into a multiplexed stream composed of second

multiplexing units which are obtained by gathering a plurality of the first

multiplexing units together; a switch position detection process of detecting a

switch position of each of the multiplexing units in the multiplexed stream which

has been converted by the stream conversion process. Shiomoto teaches a stream

conversion process 113, 114, 116 of converting the multiplexed stream into a

multiplexed stream composed of second multiplexing units which are obtained by

gathering a plurality of the first multiplexing units together; a switch position

detection process of detecting a switch position of each of the multiplexing units in

the multiplexed stream which has been converted by the stream conversion process

(Column 6 Line 53–65). It would have been obvious to one skilled in the art to

modify Fujinami to have a stream selection unit as taught by Shiomoto in order to

use less parts.

In regard to claim 11, Fujinami teaches a decoding method for subdividing

plural streams into first multiplexing units, receiving a multiplexed stream which is

obtained by switching each of the streams successively for each second

multiplexing unit obtained by gathering a plurality of the first multiplexing units

together for each of the streams, and carrying out a decoding process for each

stream included in the multiplexed stream comprising: a decoding process 7, 9 for

decoding each stream. Fujinami, however, does not teach a stream conversion

process of adding switch position information indicating a switch position of each

stream to the multiplexed stream, to perform conversion of the multiplexed stream;

a switch position detection process of detecting a switch position of each of the

multiplexing units in a multiplexed stream which has been converted by the stream

conversion process. Shiomoto teaches a stream conversion process 113, 114, 116

of adding switch position information indicating a switch position of each stream

to the multiplexed stream, to perform conversion of the multiplexed stream; a switch position detection process of detecting a switch position of each of the multiplexing units in a multiplexed stream which has been converted by the stream conversion process (Column 6 Line 53–65). It would have been obvious to one skilled in the art to modify Fujinami to have a stream selection unit as taught by Shiomoto in order to use less parts.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to the demultiplexer in general.

U.S. Patent 5,974,055 to Imanishi

U.S. Patent 5,483,539 to Kaufmann

U.S. Patent 5,913,031 to Blanchard

U.S. Patent 4,920,535 to Watanabe et al.

U.S. Patent 5,138,440 to Radice

U.S. Patent 4,977,558 to Iguchi et al.

U.S. Patent 6,631,403 to Deutsch·et al.

U.S. Patent 6,141,385 to Yamaji

U.S. Patent 6,072,832 to Katto

10.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Clemence Han whose telephone number is

(703) 305-0372. The examiner can normally be reached on Monday-Thursday 7 -

5.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Huy Vu can be reached on (703) 308-6602. The fax phone

number for the organization where this application or proceeding is assigned is

703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR

only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR system,

contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

_C, H._

Clemence Han
Examiner
Art Unit 2665

ALPUS H. HSU
PRIMARY EXAMINER